

Amendment to the Claims:

1. (Currently amended) A high pressure chemical vapor trapping system to separate and collect elements of a chemical vapor exhaust comprising:

- (a) a ~~first processing chamber~~ hot trap positioned downstream of an exhaust pump, which exhaust pump is positioned downstream from a substrate processing chamber, the hot trap having a ~~first chamber~~ hot trap input port, a ~~first chamber~~ hot trap gas output port, a ~~first chamber~~ hot trap waste collection surface, and a chamber heater to heat the ~~first processing chamber~~ hot trap to a first temperature, the ~~first processing chamber~~ hot trap ~~accepting~~ adapted to accept chemical vapor exhaust at the ~~first chamber~~ hot trap input port at a trapping pressure to further a chemical reaction, and ~~providing to provide~~ non-gaseous wastes at the ~~first chamber~~ hot trap waste collection surface, and ~~providing to provide~~ gaseous exhaust at the ~~first chamber~~ hot trap gas output port; and
- (b) a ~~second processing chamber~~ first cold trap positioned downstream from the hot trap, the ~~first cold trap~~ first cold trap having a ~~second chamber~~ first cold trap input port operatively connected to the ~~first chamber~~ hot trap gas output port, a ~~second chamber~~ first cold trap gas output port, a ~~second chamber~~ first cold trap waste collection surface, and a ~~second chamber~~ first cold trap cooler to cool the ~~second processing chamber~~ first cold trap to a second temperature, ~~[[less]]~~ said second temperature being lower than the first temperature, the ~~second processing chamber~~ first cold trap ~~accepting~~ adapted to accept chemical vapor exhaust at the ~~second chamber~~ first cold trap input port to further ~~[[a]]~~ the chemical reaction, and ~~providing to provide~~ non-gaseous wastes at the ~~second chamber~~ first cold trap waste collection surface, and gaseous exhaust at the ~~second chamber~~ first cold trap gas output port, whereby vapor by-products are collected in two stages.

2. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 further comprising:

~~[[c]]~~ an exhaust pump upstream of the hot trap and having an output operatively

connected to the ~~first processing chamber~~ hot trap input port to provide gaseous input to the ~~first processing chamber~~ hot trap, whereby a high pressure is created at the ~~first processing chamber~~ hot trap gas input port.

3. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 further comprising:

[[e]] a ~~third processing chamber~~ second cold trap having a ~~third chamber~~ second cold trap input port operatively connected to the ~~second chamber~~ first cold trap gas output port, a ~~third chamber~~ second cold trap gas output port, a ~~third chamber~~ second cold trap waste collection surface, and a ~~third chamber~~ second cold trap cooler to cool the ~~third processing chamber~~ second cold trap to a third temperature, [[less]] lower than the second temperature, the ~~third processing chamber~~ second cold trap accepting chemical vapor exhaust at the ~~third chamber~~ second cold trap input port to further a chemical reaction, and providing non-gaseous wastes at the ~~third chamber~~ second cold trap waste collection surface, and providing gaseous exhaust at the ~~third chamber~~ second cold trap gas output port, whereby vapor by-products are collected in three stages.

4. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 in which the ~~first processing chamber~~ hot trap first temperature is in the range from ~~100 to 500 degrees Celsius~~ 100°C to 500°C.
5. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 in which the ~~second processing chamber~~ first cold trap second temperature is in the range from ~~25 degrees to minus 200 degrees Celcius~~ 25°C to -200°C.
6. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 wherein the chemical vapor exhaust is a MOCVD precursor exhaust, in which the ~~first processing chamber~~ hot trap includes a plurality of collection surfaces extending into the ~~first processing chamber~~ hot trap, the plurality of collection surfaces being heated to the first temperature, and in which the ~~metal~~ plurality of collection surfaces are reclaimed when a predetermined

amount of a solid metal waste is collected on the plurality of collection surfaces from the chemical vapor exhaust.

7. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 further comprising a first valve at the ~~first processing chamber~~ hot trap input port, and a second valve at the ~~first processing chamber~~ hot trap output port, whereby the first and second valves in the ~~first processing chamber~~ hot trap prevent exhaust from escaping from the ~~first processing chamber~~ hot trap when the ~~first processing chamber~~ hot trap is disconnected.
8. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 further comprising a third valve at the ~~second processing chamber~~ first cold trap input port, and a fourth valve at the ~~second processing chamber~~ first cold trap output port, whereby the third and fourth valves in the ~~second processing chamber~~ first cold trap prevent exhaust from escaping from the ~~second processing chamber~~ first cold trap when the ~~second processing chamber~~ first cold trap is disconnected.
9. (Currently amended) A high pressure chemical vapor trapping system as in claim 3 further comprising a fifth valve at the ~~third processing chamber~~ second cold trap input port, and a sixth valve at the ~~third processing chamber~~ second cold trap output port, whereby the fifth and sixth valves in the ~~third processing chamber~~ second cold trap prevent the chemical vapor exhaust from escaping from the ~~third processing chamber~~ second cold trap when the ~~third processing chamber~~ second cold trap is disconnected.
10. (Currently amended) A high pressure chemical vapor trapping system as in claim 1 wherein the chemical vapor exhaust is a MOCVD precursor, in which said ~~first processing chamber~~ hot trap plurality of collection surfaces is biased with a voltage, whereby charged metal from the MOCVD precursor is attracted to and deposited on the plurality of collection surfaces.
11. (Currently amended) A high pressure chemical vapor trapping system as in claim 10 wherein the bias voltage is in the range from -10 to -1000 volts DC, whereby the charged metal from

the MOCVD precursor is positively charged metal from the MOCVD precursor and is attracted to and deposited on the plurality of collection surfaces.

12. (Currently amended) A high pressure chemical vapor trapping system as in claim 10 wherein the bias voltage is in the range from 10 to 100 volts DC, whereby the charged metal from the MOCVD precursor is negatively charged metal from the MOCVD precursor and is attracted to and deposited on the plurality of collection surfaces.

13. (Currently amended) A ~~[[low]]~~ high pressure chemical vapor trapping system as in claim 1 in which the ~~first processing chamber~~ hot trap includes a second input port to accept a catalyst to further~~[[s]]~~ the chemical reaction in the ~~first chamber~~ hot trap, the catalyst selected from the group consisting of oxygen, water, alcohol, and ammonia.

14. (Cancelled)

15. (New) A high pressure chemical vapor trapping system to separate and collected elements of a chemical vapor exhaust, the chemical vapor trapping system comprising:

a processing chamber;

a vacuum pump operatively connected to, and downstream of the processing chamber;

a hot trap operatively connected to and positioned downstream of the vacuum pump;

and

a first cold trap operatively connected with and positioned downstream of the hot trap, wherein the chemical vapor exhaust passes sequentially from the processing chamber to the vacuum pump and to the hot trap, and then to the first cold trap, wherein a non-gaseous chemical waste is separately collected in the hot trap and in the first cold trap, and a gaseous exhaust is thereafter vented.

16. (New) The high pressure chemical vapor trapping system as in claim 15 wherein the vacuum

pump is a dry vacuum pump.

17. (New) The high pressure chemical vapor trapping system as in claim 15 wherein the vacuum pump is a wet vacuum pump.
18. (New) The high pressure chemical vapor trapping system as in claim 15 further comprising a second cold trap operatively connected with and positioned downstream of the first cold trap, the second cold trap intended for collecting any additional non-gaseous waste before the gaseous exhaust is vented.
19. (New) The high pressure chemical vapor trapping system as in claim 18 wherein the second cold trap is colder than the first cold trap.
20. (New) The high pressure chemical vapor trapping system as in claim 15 further comprising a plurality of waste collection surfaces contained within the hot trap and the first cold trap.
21. (New) The high pressure chemical vapor trapping system as in claim 18 further comprising a plurality of waste collection surfaces contained within the hot trap, the first cold trap, and the second cold trap.
22. (New) The high pressure chemical vapor trapping system as in claim 15 wherein the temperature in the hot trap ranges from 100°C -500°C.
23. (New) The high pressure chemical vapor trapping system as in claim 15 wherein the processing chamber, the vacuum pump, the hot trap, and the first cold trap can be isolated from each other with input valves and output valves, wherein the input valves and the output valves control the flow of the chemical vapor exhaust through the chemical vapor trapping system.
24. (New) The high pressure chemical vapor trapping system as in claim 18 wherein the

processing chamber, the vacuum pump, the hot trap, the first cold trap, and the second cold trap can be isolated from each other with input valves and output valves, wherein the input valves and the output valves control the flow of the chemical vapor exhaust through the chemical vapor trapping system.